

What is claimed is:

1 1. A plasma display panel comprising:
2 a first substrate having a plurality of electrode
3 pairs covered by a dielectric layer, at least one of
4 electrodes constituting each said electrode pair being
5 separated in a thickness direction of said dielectric layer
6 to form a lower electrode and an upper electrode, said
7 lower and upper electrodes being connected electrically
8 each other such that said lower and upper electrodes
9 becomes equipotential;

10 a second substrate arranged in an opposing relation
11 to said first substrate with a gap; and
12 discharge gas filling said gap between said first
13 substrate and said second substrate.

1 2. A plasma display panel as claimed in claim 1, wherein
2 said upper electrode includes electrodes provided in a
3 plurality of different layers in the thickness direction of
4 said dielectric layer.

1 3. A plasma display panel as claimed in claim 2, wherein
2 each of said electrodes of each said electrode pair
3 includes said lower electrode and said upper electrode, one
4 of said upper electrodes includes opposing electrodes
5 provided in a plurality of different layers and the other
6 opposing upper electrode includes opposing electrodes
7 provided in the same number of different layers and
8 corresponding ones of said electrode layers of said
9 opposing upper electrodes are in the same position in the

10 thickness direction of said dielectric layer.

1 4. A plasma display panel as claimed in claim 3, wherein
2 said one of said opposing upper electrodes and said the
3 other of said opposing upper electrodes are formed
4 symmetrically about a center of a first sustain gap between
5 one of said opposing lower electrodes of each said
6 electrode pair and the other lower electrode.

1 5. A plasma display panel as claimed in claim 4, wherein
2 a second sustain gap is provided between one of said upper
3 electrodes and the other upper electrode, which are
4 mutually opposing with a gap therebetween, which gap is the
5 smallest among gaps between said upper electrodes of said
6 electrode pair, and said second sustain gap is
7 substantially coincident with said first sustain gap.

1 6. A plasma display panel as claimed in claim 4, wherein
2 a second sustain gap is provided between one of said upper
3 electrodes and the other upper electrode, which are
4 mutually opposing with a gap therebetween, which gap is the
5 smallest among gaps between said upper electrodes of said
6 electrode pair, and one of said first sustain gap and said
7 second sustain gap is within the other region.

1 7. A plasma display panel as claimed in claim 3, wherein
2 a center of said first sustain gap is deviated from a
3 center of said second sustain gap.

1 8. A plasma display panel as claimed in claim 1, wherein
2 each of said electrodes of each said electrode pair
3 includes said lower electrode and said upper electrode and

4 at least one divided electrode having a potential equal to
5 the potential of one of said upper electrodes is provided
6 on a side of said one upper electrode corresponding to at
7 least one of said lower electrodes in a plane, which is the
8 same as a plane of said one upper electrode, remote from
9 said other lower electrode.

1 9. A plasma display panel as claimed in claim 1, wherein
2 a width of said upper electrode is a half of a width of
3 said lower electrode or less.

1 10. A plasma display panel as claimed in claim 1, wherein
2 a width of said upper electrode is one fifth a width of
3 said lower electrode or less.

1 11. A plasma display panel as claimed in claim 1, further
2 comprising a connecting wiring for electrically connecting
3 said upper electrode to said lower electrode to make said
4 upper and lower electrodes equipotential and a low
5 resistance wiring for leading said upper electrode together
6 with said lower electrode externally.

1 12. A plasma display panel as claimed in claim 11,
2 further comprising partition walls formed on said second
3 substrate extending in parallel in a direction orthogonal
4 to said electrode pairs formed on said first substrate,
5 wherein said first substrate includes discharge cell
6 regions uniformly partitioned by said partition walls and
7 regions for separating the plurality of said electrode
8 pairs and said connecting wiring is formed in a region of
9 each said discharge cell region except said second sustain

10 gap between said upper electrodes corresponding to said
11 electrode pair.

1 13. A plasma display panel as claimed in claim 11,
2 wherein said low resistance wiring is formed either on said
3 substrate on which said lower electrodes are formed or in a
4 position of said upper electrode in a thickness direction
5 of said dielectric layer.

1 14. A plasma display panel as claimed in claim 1, wherein
2 said upper electrode is formed in a single layer and said
3 dielectric layer includes a first dielectric layer
4 deposited on said substrate and underlying said upper
5 electrode and a second dielectric layer covering said
6 substrate having said first dielectric layer.

1 15. A plasma display panel as claimed in claim 14,
2 wherein said upper electrodes constitute a single layer
3 upper electrode pair corresponding to said electrode pair
4 and said dielectric layer is formed below said second
5 sustain gap between said upper electrode pair such that
6 said dielectric layer contains said second sustain gap.

1 16. A plasma display panel as claimed in claim 1, wherein
2 said discharge gas contains at least one of xenon, krypton,
3 argon and nitrogen as exciting gas for generating
4 ultraviolet light for exciting a fluorescent member and a
5 partial pressure of the exciting gas is 100hPa or higher
6 when said exciting gas contains one of xenon, krypton,
7 argon and nitrogen.

1 17. A method for fabricating a plasma display panel,

2 comprising the steps of:

3 forming a first electrode pair on a surface of a
4 first substrate, said first electrode pair constituting
5 lower electrodes;

6 forming a first dielectric layer covering at least a
7 first region between said first electrode pair;

8 forming a second electrode pair on said first
9 dielectric layer, said second electrode pair constituting
10 upper electrodes;

11 depositing a second dielectric layer covering said
12 first substrate including said first dielectric layer;

13 arranging said second substrate in an opposing
14 relation to said first substrate with a gap therebetween;
15 and

16 filling said gap with discharge gas.

1 18. A method for fabricating a plasma display panel, as
2 claimed in claim 17, wherein the step of forming said first
3 dielectric layer is performed by patterning said first
4 dielectric layer before said first region is at least
5 covered thereby.

1 19. A method for fabricating a plasma display panel, as
2 claimed in claim 17, further comprising, after the step of
3 forming said second electrode pair, the step of
4 simultaneously forming connecting wiring for connecting
5 said second electrode to a first electrode corresponding to
6 said second electrode and a common electrode wiring for
7 reducing a resistance of lead wiring of said first

8 electrode and said second electrode.

1 20. A method for fabricating a plasma display panel, as
2 claimed in claim 17, wherein the step of forming said
3 second electrode is performed by forming connecting wiring
4 for connecting said second electrode to a first electrode
5 corresponding to said second electrode and a common
6 electrode wiring for reducing a resistance of a connecting
7 wiring of said first electrode and said second electrode
8 simultaneously with the formation of said second electrode.

DRAFT